

FUKUI, A. et al.
Appl. No. 10/815,976
Atty. Ref.: 900-495
Amendment After Final Rejection
June 11, 2009

AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows:

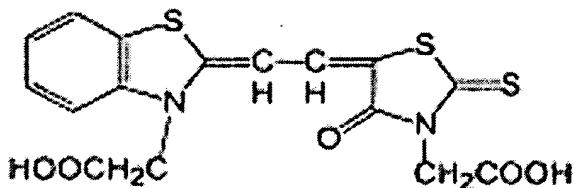
1. (Currently Amended) A dye-sensitized solar cell comprising a transparent conductive layer, a porous semiconductor layer on which a dye sensitizer is adsorbed, a carrier transport layer and a counter electrode which are formed in this order on a transparent substrate,

wherein an absorbance peak of the porous semiconductor layer is located on a shorter wavelength side of the absorbance spectrum than that of the porous semiconductor layer observed immediately after the dye sensitizer is adsorbed

wherein

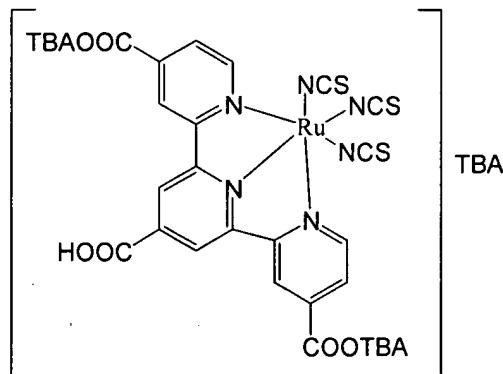
~~the dye sensitizer is cis-bis(isothiocyanato)bis(2,2'-bipyridyl-4,4'-dicarboxylato)-ruthenium(II)bis-tetrabutylammonium and the absorbance peak of the porous semiconductor layer is located within the range of 490 nm \pm 35 nm, or~~

the dye sensitizer is a compound with the following formula:



, or

the dye sensitizer is tris(isothiocyanato)-ruthenium(II)-2,2':6',2"-terpyridine-4,4',4"-tricarboxylic acid, tris-tetrabutylammonium salt having the formula (1):



(wherein TBA is tetrabutylammonium residual group) and the absorbance peak of the porous semiconductor layer is located within the range of $580\text{ nm} \pm 35\text{ nm}$,
wherein said porous semiconductor layer on which a dye sensitizer is adsorbed has been treated with light radiation or said porous semiconductor layer on which a dye sensitizer is adsorbed has been chemically treated, such that an absorbance peak of the porous semiconductor layer on which a dye sensitizer is adsorbed is located on a shorter wavelength side of the absorbance spectrum after the light radiation or chemical treatment than the absorbance peak of the semiconductor layer on which a dye sensitizer is adsorbed prior to the light radiation or chemical treatment.

2. (Original) The dye-sensitized solar cell of claim 1, wherein the porous semiconductor layer is made of titanium oxide.

Claims 3-20. (Cancelled)

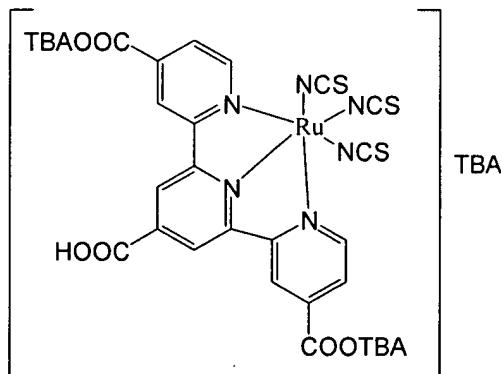
21. (Currently Amended) [[A]]The dye sensitized solar cell of claim 1 comprising a transparent conductive layer, a porous semiconductor layer on which a dye sensitizer is adsorbed, a carrier transport layer and a counter electrode which is formed in this order on a transparent substrate,

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wherein said porous semiconductor layer on which a dye sensitizer is adsorbed has been treated with light radiation such that an absorbance peak of the porous semiconductor layer on which a dye sensitizer is adsorbed is located on a shorter wavelength side of the absorbance spectrum after the light radiation than the absorbance peak of the semiconductor layer on which a dye sensitizer is adsorbed prior to the light radiation.

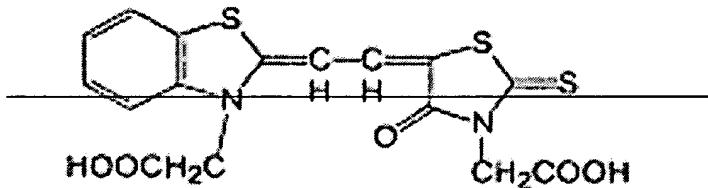
Claims 22-25. (Canceled)

26. (Currently Amended) The dye-sensitized solar cell of claim [[21]]1
wherein
~~the dye sensitizer is cis-bis(isothiocyanato)bis(2,2'-bipyridyl-4,4'-dicarboxylate)-ruthenium(II)bis-tetrabutylammonium and the absorbance peak of the porous semiconductor layer is located within the range of 490 nm ± 35 nm, or~~
the dye sensitizer is tris(isothiocyanato)-ruthenium(II)-2,2':6',2"-terpyridine-4,4',4"-tricarboxylic acid, tris-tetrabutylammonium salt having the formula (1):

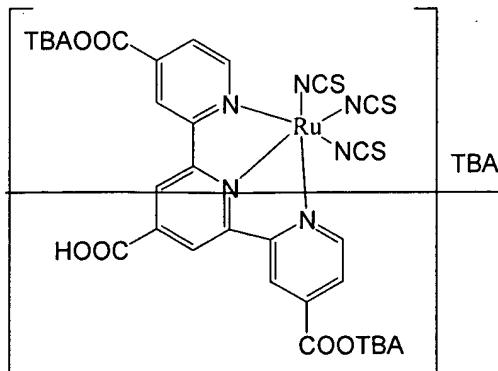


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(wherein TBA is tetrabutylammonium residual group) and the absorbance peak of the porous semiconductor layer is located within the range of $580\text{ nm} \pm 35\text{ nm}$, or
~~the dye sensitizer is a compound with the following formula:~~

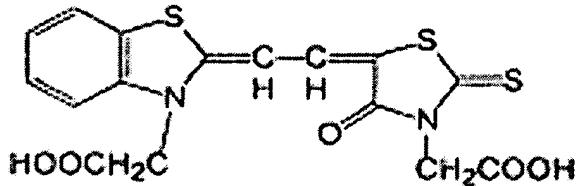


27. (Currently Amended) The dye-sensitized solar cell of claim [[22]]1
wherein
~~the dye sensitizer is cis-bis(isothiocyanato)bis(2,2'-bipyridyl-4,4'-dicarboxylato)-ruthenium(II)bis-tetrabutylammonium and the absorbance peak of the porous semiconductor layer is located within the range of $490\text{ nm} \pm 35\text{ nm}$, or~~
~~the dye sensitizer is tris(isothiocyanato)-ruthenium(II)-2,2':6',2"-terpyridine-4,4',4"-tricarboxylic acid, tris-tetrabutylammonium salt having the formula (1):~~



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(wherein TBA is tetrabutylammonium residual group) and the absorbance peak of the porous semiconductor layer is located within the range of 580 nm \pm 35 nm, or the dye sensitizer is a compound with the following formula:



28. (Currently Amended) [[A]]The dye sensitized solar cell of claim 1 comprising a transparent conductive layer, a porous semiconductor layer on which a dye sensitizer is adsorbed, a carrier transport layer and a counter electrode which is formed in this order on a transparent substrate,

wherein said porous semiconductor layer on which a dye sensitizer is adsorbed has been chemically treated such that an absorbance peak of the porous semiconductor layer on which a dye sensitizer is adsorbed is located on a shorter wavelength side of the absorbance spectrum after the chemical treatment than the absorbance peak of the semiconductor layer on which a dye sensitizer is adsorbed prior to the chemical treatment,

wherein the chemical treatment is carried out by immersing the porous semiconductor layer in a solution containing at least one compound selected from the group consisting of furan, tetrahydrofuran, dioxole, dioxolan, thiophene, tetrahydrothiophene, pyrrole, imidazole, pyran, tetrahydropyran, dioxene, dioxane, dioxine, trioxane, quinolizine, quinoxaline, quinoline, 2-methylbenzothiazole, 2-

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methylbenzoxazole, carbazole, carboline, phenazine, imidazoles, ethylimidazolium iodide, ethylmethylimidazolium iodide, methylpropylimidazolium iodide, dimethylpropylimidazolium iodide and hexylmethylimidazolium iodide, after the dye sensitizer is adsorbed on the porous semiconductor layer,

wherein an amount of the solution is at least 30 times as much as that of the porous semiconductor layer by volume.

Claims 29-34. (Canceled)

35. (Previously Presented) The dye-sensitized solar cell of claim 28, wherein the chemical treatment is carried out by immersing in the solution for 1 minute to 30 hours the porous semiconductor layer after the dye sensitizer is adsorbed.

Claims 36-37. (Canceled)

Claim 38. (Canceled)